

Remarks

Favorable reconsideration of this application is requested in view of the following remarks. For the reasons set forth below, Applicant respectfully submits that the claimed invention is allowable over the cited references.

The non-final Office Action dated December 9, 2003, acknowledged Applicant's election with traverse and made the restriction final; indicated that claims 12-20 are rejected under 35 U.S.C. § 112(2); and that claims 12-20 are rejected under 35 U.S.C. § 103(a) over *Paniccia et al.* (U.S. Patent No. 6,072,179) in view of *Kikuchi et al.* (U.S. Patent No. 5,999,006).

With respect to the Section 112(2) rejection, Applicant respectfully traverses because the claims particularly point out and distinctly claim the subject matter of the invention. The Office Action alleges that certain claim limitations are not understood and asks: (1) whether the modulation prevents the beam from reaching the circuit; or (2) whether the beam is of such short duration that the signal is not detected by the circuit. These questions are answerable with reference to an embodiment of the instant Specification, *e.g.*, page 6, lines 14-20, and Figure 1, which indicates that the modulated optical beam reaches the selected portion of the die and that the laser modulation is used to inhibit the optical beam's intrusion on the IC. As discussed in the Background and other portions of the Specification, SOI structures are particularly sensitive to optical-beam circuit analysis. The modulation at least mitigates excessive intrusion into the SOI die. The Specification discusses these claim limitations which are clearly and distinctly set forth in the claims and in compliance with Section 112(2). Accordingly, Applicant requests that the Section 112(2) rejection be withdrawn.

Applicant respectfully traverses the Section 103(a) rejection because the Office Action fails to identify a reference that corresponds to each of the claimed limitations. The Office Action asserts at page 3, that the '179 reference teaches a "mode-locked laser beam" without identifying how the '179 laser beam corresponds to the claimed modulated optical beam. Applicant's review of the '179 reference's laser 407 indicates that laser 407 appears to require an unmodulated beam so that detector 417 can attribute modulated reflections solely "to the voltage in the active region 403." Column 5, lines 20-24. Moreover, the '179 reference explains that "mode lock" refers to a laser beam

having a locked frequency, *e.g.*, approximately 1.064 micrometers. Column 5, lines 25-43. Further, the Office Action fails to assert any correspondence to limitations directed to the modulation being adapted to inhibit intrusion upon the integrated circuit. Without a showing of complete correspondence to each of the claimed limitations, the Section 103(a) rejection is improper and cannot be maintained. Applicant accordingly requests that the rejection be withdrawn.

With particular respect to claim 15, the Office Action ignores claim limitations directed to the optical beam pulse length. The Office Action alleges that “mode lock” refers to pulsing without any basis provided and then concludes that “since criticality has not been established it would be obvious to use any pulse length needed for circuit analysis as a matter of design choice.” Based at least on the above discussion and the description of “mode lock” in the ‘179 reference, Applicant disagrees and, pursuant to MPEP § 2144.03, requests evidence in support of this asserted definition of “mode lock.” Moreover, claim 15 is specifically directed to an optical beam arrangement adapted to pulse a laser at “femto-second-range pulses,” with the modulation being important for a circuit structure problem that is not a concern for the ‘179 reference. The Office Action cannot ignore such specific claim limitations when none of the cited references recognize or address the problem. *See* MPEP § 2141.02. This is part of the “subject matter as a whole” which should always be considered in determining the obviousness of an invention under 35 U.S.C. § 103. Without a showing of correspondence to each of the claimed limitations, the Section 103(a) rejection cannot stand. Applicant requests that the rejection be withdrawn.

Applicant further traverses the Section 103(a) rejection because the Office Action’s proposed modification would frustrate both the purpose and operation of the ‘179 teachings thereby rendering the proposed modification unmotivated and improper. The MPEP states that when a proposed modification would render the teachings being modified unsatisfactory for their intended purpose, there is no suggestion or motivation to make the proposed modification under 35 U.S.C. § 103(a). *See* MPEP § 2143.01. The ‘179 reference is generally directed to analyzing beam-targeted circuitry from the backside of a die to test the integrity of the beam-targeted circuitry (*see* columns 1-2). With the proposed modification (to use the ‘179 analysis on SOI structures), the ‘179

system illustrated in figure 4 would direct the laser beam 413 through the BOX layer of the SOI structure. Because the beam is "mode locked" the laser beam 413 would destroy the SOI structure and thereby eliminate the possibility of testing the structure's integrity. To suggest that the skilled artisan would use the '179 teachings on SOI structures is untenable and would undermine the purpose and operation of the '179 reference. Thus, the proposed combination is unmotivated and Applicant requests that the Section 103(a) rejection be withdrawn.

In view of the remarks above, Applicant believes that the rejection has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is encouraged to contact the undersigned at (651) 686-6633.

Respectfully submitted,

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